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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,810	01/16/2001	Abraham Mendelson	42390P10140	7766

8791 7590 09/14/2004

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EXAMINER

KIM, HONG CHONG

ART UNIT PAPER NUMBER

2186

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/764,810

Applicant(s)

MENDELSON ET AL.

Examiner

Hong C Kim

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Detailed Action

1. Claims 1-30 are presented for examination. This office action is in response to the amendment filed on 7/6/04.
2. Applicants are reminded of the duty to disclose information under 37 CFR 1.56.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 10, 11-16, 20, 21-26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peleg et al. (Peleg) US Paten No. 5,381,533 in view of Werner US Paten No. 6,397,296.

As to claims 1, 11, and 21, Peleg discloses an apparatus comprising: a cache management logistics to control a transfer of a trace (Fig. 1, Ref. 20 and col. 5 lines 63-66); an execution unit (Fig. 1, Ref. 21); a first cache (Fig. 1, Ref. 23) to evict the trace based on a replacement mechanism (cache miss reads on this limitation, since a line is needed to evict to free up a space for a new entry, col. 8 lines 59-65 and col. 9 lines 23-26), however, Peleg does not specifically disclose a second cache to receive the evicted trace based on a first number of access to the trace.

Werner discloses a second cache (Fig. 2 Refs. 22 & 24 and col. 8 line 65 thru col. 9 line 8) to receive the evicted trace based on a first number of access to the trace (col. 8 line 65 thru col. 9 line 8) for the purpose of increasing the hit rate thereby increasing the system speed.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a second cache as taught by Werner into the invention of Peleg for the advantages stated above.

As to claims 2, 12, and 22, Werner further discloses a usage counter (col. 8 line 65 thru col. 9 line 8, most frequently accessed reads on this limitation).

As to claims 3, 13, and 23, Werner further discloses a comparator and a first threshold value that being a fixed number or a first dynamically adjusted number (col. 8 line 65 thru col. 9 line 8, most frequently accessed cache lines reads on this limitation).

As to claims 4, 14, and 24, Werner further discloses the trace is transferred from the first cache to the second cache (col. 8 line 65 thru col. 9 line 8 and col. 2 lines 23-25).

As to claims 5, 15, and 25, Peleg further discloses the trace is discarded (cache miss reads on this limitation, since a cache line is needed to evict to free up a space for a new entry, col. 8 lines 59-65 and col. 9 lines 23-26).

As to claims 6, 16, and 26, Werner further discloses a L2 cache (Fig. 2 Ref. 18).

As to claims 10, 20, and 30, Werner further discloses a LRU mechanism (col. 2 lines 26-27).

4. Claims 7-9, 17-19, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peleg et al. (Peleg) US Paten No. 5,381,533 in view of Werner US Paten No. 6,397,296 and further in view of Arlitt et al. (Arlitt) U.S. Patent No. 6,272,598.

As to claims 7-9, 17-19, and 27-29 Peleg and Werner disclose the invention as above, however, neither Peleg nor Werner specifically discloses a second threshold value for a replacement policy.

Arlitt discloses a second threshold value for a replacement policy (col. 6 lines 43-55) for the purpose of increasing the hit rate thereby increasing the system speed.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a second threshold value for a replacement policy as taught by Arlitt into the combined invention of Peleg and Werner for the advantages stated above.

Response to Amendment

5. Applicant's arguments filed on 7/6/04 have been fully considered but they are not persuasive.

Applicant's argument that the reference does not disclose transfer of a trace and a first cache to evict the trace based on a replacement mechanism is not considered persuasive.

Peleg discloses transfer of a trace (Fig. 1, Ref. 20 and col. 5 lines 63-66) and a first cache (Fig. 1, Ref. 23) to evict the trace based on a replacement mechanism (cache miss reads on this limitation, since a line is needed to evict to free up a space for a new entry, col. 8 lines 59-65 and col. 9 lines 23-26).

Therefore broadly written claims are disclosed by the references cited.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892.
7. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) days from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 USC 133, MPEP 710.02, 710.02(b)).
8. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. ' 1.111(c).

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9. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong C Kim whose telephone number is 703-305-3835. The examiner can normally be reached on M-F 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt M Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12. **Any response to this action should be mailed to:**

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Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to TC-2100:
(703) 872-9306

A handwritten signature in black ink, appearing to be 'Idy' followed by a stylized flourish.

HK
Primary Patent Examiner
September 10, 2004